FIG.1

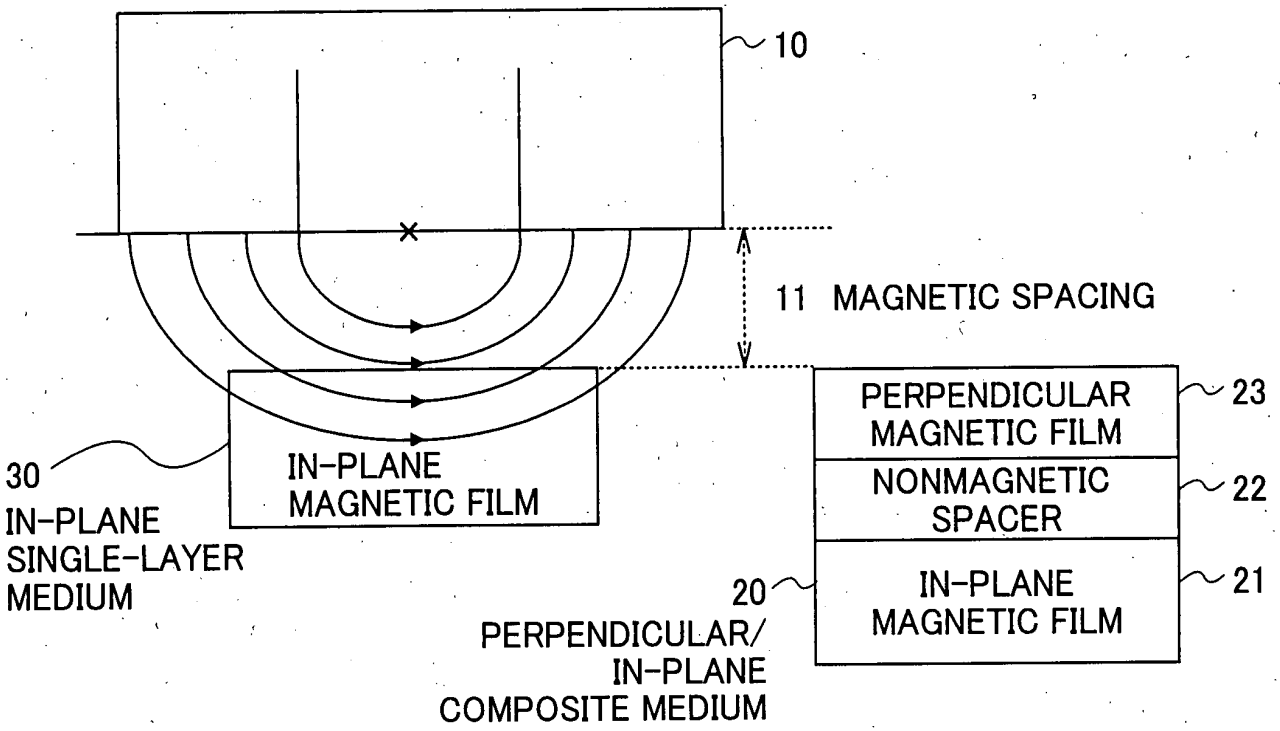

FIG.2

	THICKNESS (nm)	PARTICLE DIAMETER (nm)	EXCHANGE INTERACTION PARDMETER he
IN-PLANE SINGLE-LAYER MEDIUM	10	5	0.05
PERPENDICULAR/ IN-PLANE COMPOSITE MEDIUM	1/1/10 *		

* IN THE ORDER OF PERPENDICULAR MAGNETIC FILM, NONMAGNETIC SPACER, AND IN-PLANE MAGNETIC FILM.

FIG.3

	PERPENDICULAR MAGNETIC FILM			IN-PLANE MAGNETIC FILM			V (%)	TRANSITION BREADTH π a (%)
	Ms (emu/cc)	Hk (kOe)	tBr (Gum)	Ms (emu/cc)	Hk (kOe)	tBr (Gum)		
IN-PLANE SINGLE-LAYER MEDIUM	—	—	—	500	4	47.1	0%	0%
PERPENDICULAR/ IN-PLANE COMPOSITE MEDIUM	250	8	3.1				-1.6%	-0.4%
	500	8	6.3				-16.0%	7.9%

FIG.4

	THICKNESS (nm)	PARTICLE DIAMETER (nm)	EXCHANGE INTERACTION PARDMETER he
IN-PLANE SINGLE-LAYER MEDIUM	6	5	0.05
PERPENDICULAR/ IN-PLANE COMPOSITE MEDIUM	1/1/6*		

* IN THE ORDER OF PERPENDICULAR MAGNETIC FILM, NONMAGNETIC SPACER, AND IN-PLANE MAGNETIC FILM.

FIG.5

		PERPENDICULAR MAGNETIC FILM			IN-PLANE MAGNETIC FILM			Output@ 460kfci	S/N@460kfci	
		Ms (emu/cc)	Hk (kOe)	tBr (Gum)	Ms (emu/cc)	Hk (kOe)	tBr (Gum)	V (%)	S/Nm (dB)	DIFFERENTIAL (dB)
IN-PLANE SINGLE-LAYER MEDIUM	①				600	12.6	56.5	0.0%	13.9	0.0
PERPENDICULAR/ IN-PLANE COMPOSITE MEDIUM	②	600	22	7.5				-1.0%	14.8	+0.9
	③	200	18	2.5				-6.3%	15.1	+1.2
	④	200	15	2.5				-3.6%	14.2	+0.3
	⑤	200	10	2.5				2.5%	14.2	+0.3

FIG. 6A

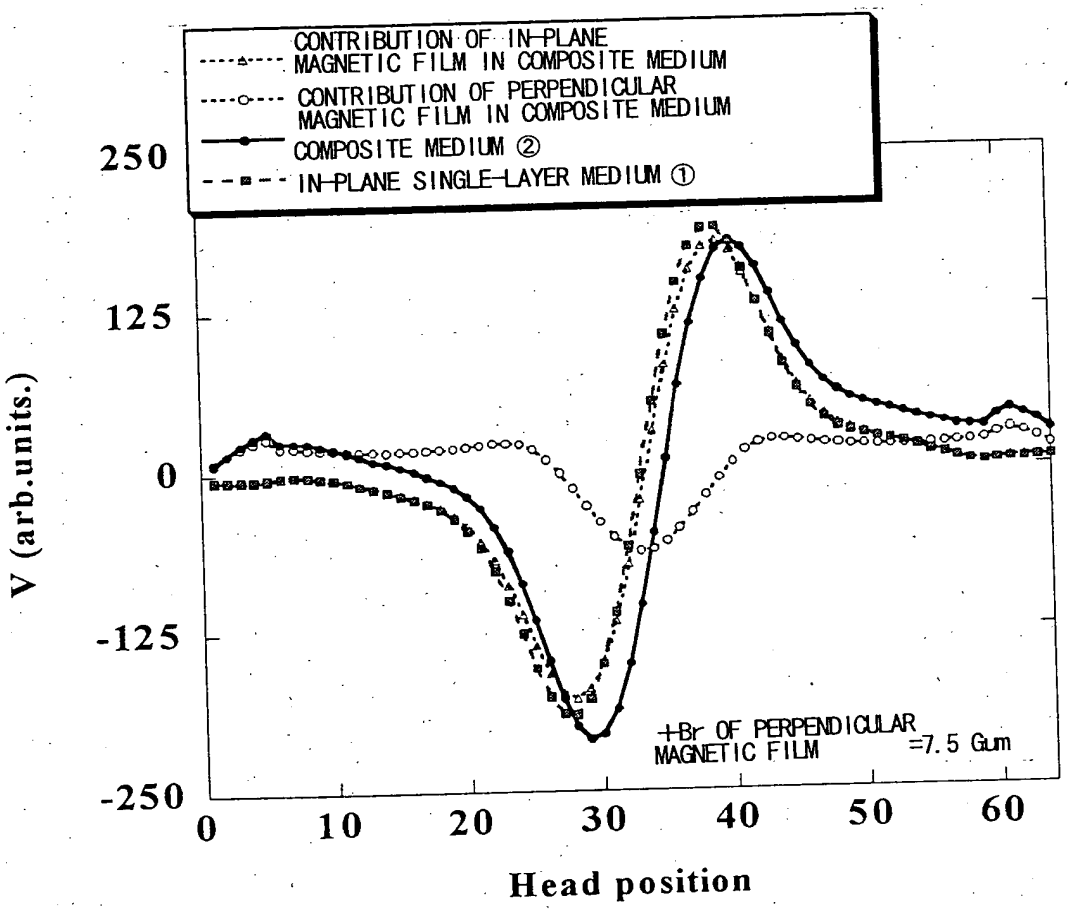
CONTRIBUTION OF IN-PLANE MAGNETIC FILM IN COMPOSITE MEDIUM
CONTRIBUTION OF PERPENDICULAR MAGNETIC FILM IN COMPOSITE MEDIUM
COMPOSITE MEDIUM ②
IN-PLANE SINGLE-LAYER MEDIUM ①
250
125
0
-125
-250
V (arb.units.)
0
10
20
30
40
50
60
Head position
+Br OF PERPENDICULAR MAGNETIC FILM =7.5 Gum

FIG. 6B

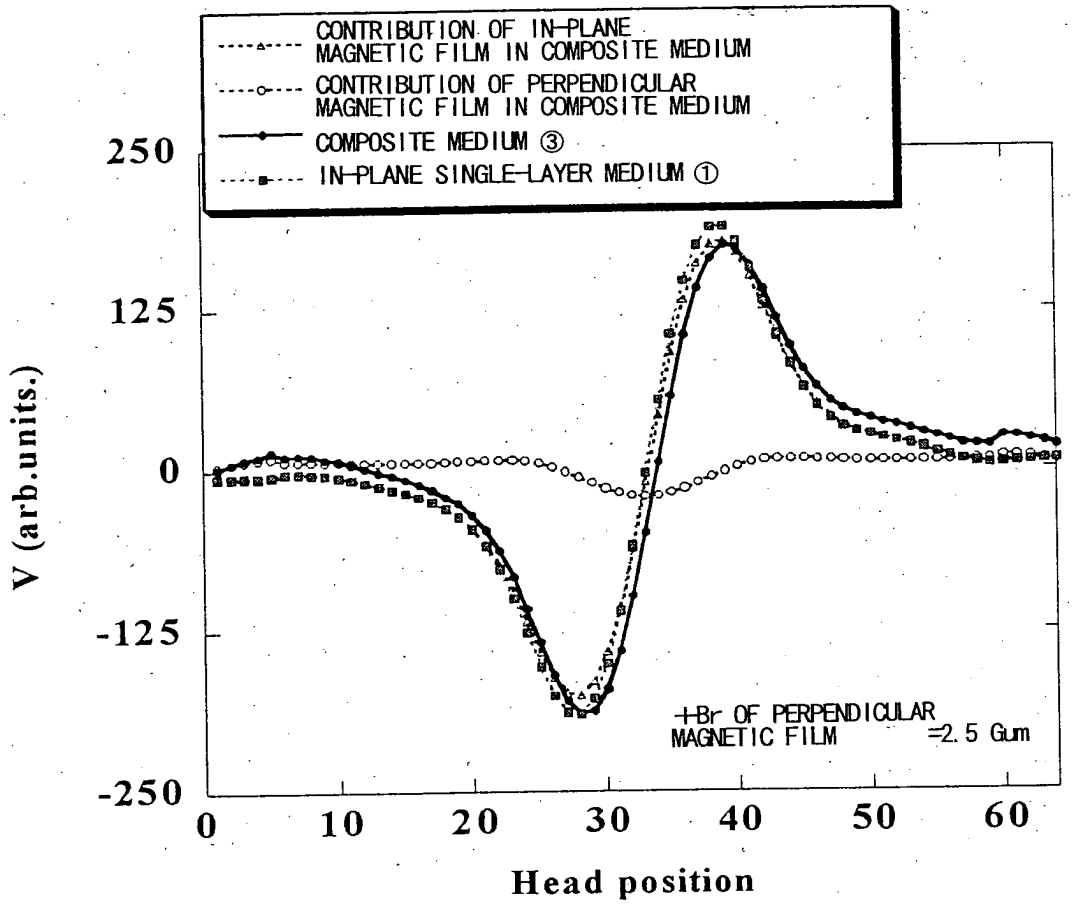
CONTRIBUTION OF IN-PLANE MAGNETIC FILM IN COMPOSITE MEDIUM
CONTRIBUTION OF PERPENDICULAR MAGNETIC FILM IN COMPOSITE MEDIUM
COMPOSITE MEDIUM ③
IN-PLANE SINGLE-LAYER MEDIUM ①
250
125
0
-125
-250
V (arb.units.)
0
10
20
30
40
50
60
Head position
+Br OF PERPENDICULAR MAGNETIC FILM =2.5 Gum

FIG.7

RECORDING HEAD MAGNETIC FIELD AT THE CENTER OF THE MEDIUM (kOe)	Ms OF IN-PLANE MAGNETIC FILM (emu/cc)	Hk OF IN-PLANE MAGNETIC FILM (kOe)	Ms OF PERPENDICULAR MAGNETIC FILM (emu/cc)	Hk OF PERPENDICULAR MEGNETIC FILM (kOe)
7.1	600	12.6	200	17.5
7.5	600	12.6	200	18.0
8.5	600	12.6	200	18.0

FIG.8A

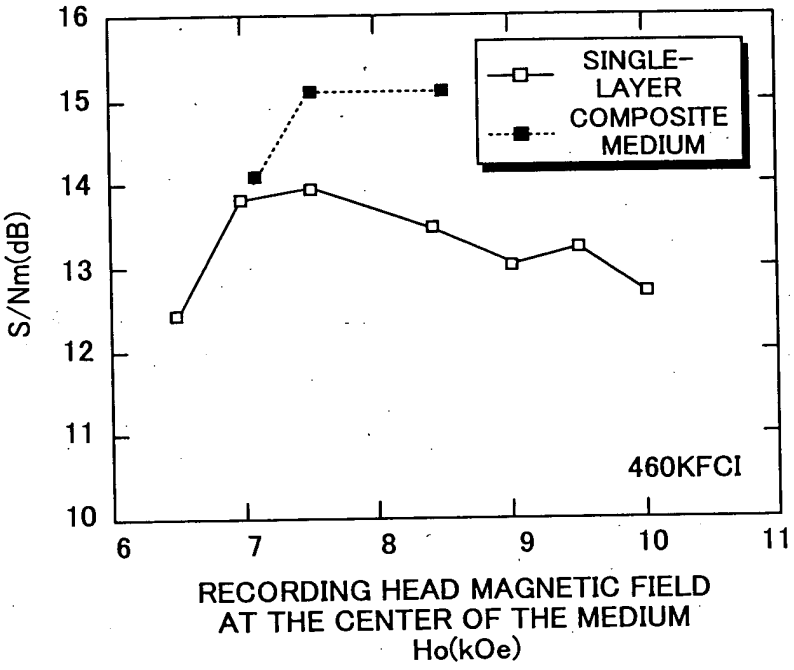
16
15
14
13
12
11
10
S/Nm(dB)
SINGLE-LAYER
COMPOSITE MEDIUM
460KFCI
6
7
8
9
10
11
RECORDING HEAD MAGNETIC FIELD
AT THE CENTER OF THE MEDIUM
Ho(kOe)

FIG.8B

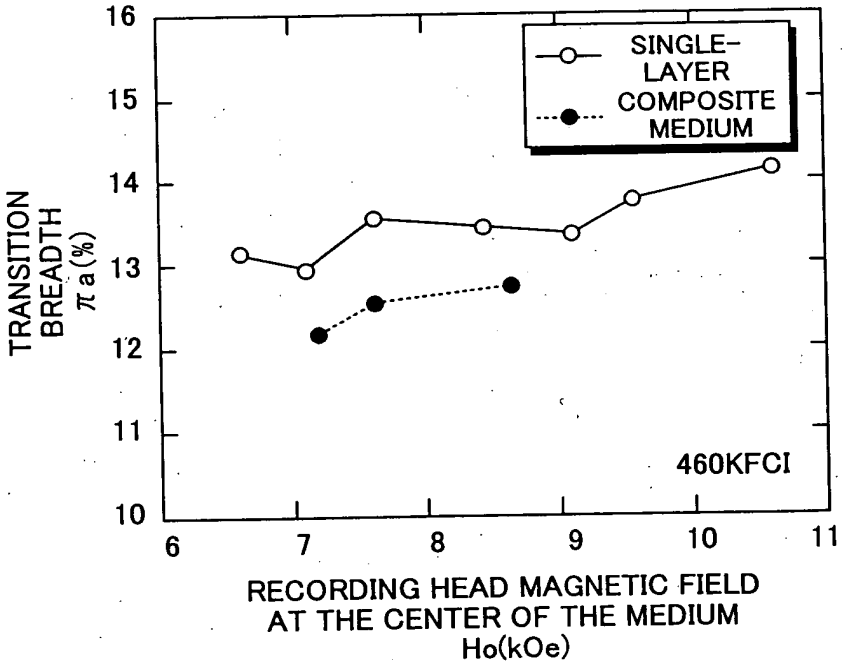
16
15
14
13
12
11
10
TRANSITION BREADTH
πa(%)
SINGLE-LAYER
COMPOSITE MEDIUM
460KFCI
6
7
8
9
10
11
RECORDING HEAD MAGNETIC FIELD
AT THE CENTER OF THE MEDIUM
Ho(kOe)

FIG. 9

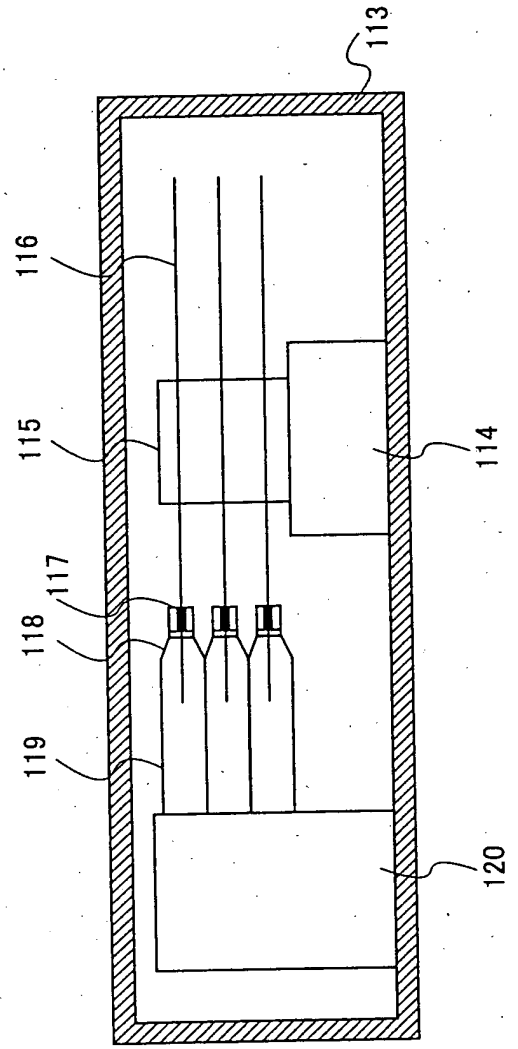

FIG. 10